

WHAT IS CLAIMED IS:

- 09881275-061401
- 1 1. A method of expressing a movement of a crowd made up
2 of a plurality of individuals in an information processing
3 apparatus, said method comprising the steps of:
4 obtaining the number of individuals which form a crowd at
5 time t and the position of each individual, and assigning a
6 position to each individual in the crowd at the next time $t + 1$ in
7 accordance with a predetermined arrangement rule;
8 determining a destination direction with regard to a
9 reference point of the crowd, determined by the positions of the
10 individuals which form the crowd at time t ; and
11 determining the position at the next time $t + 1$ according to
12 the position assigned by said arrangement process and said
13 destination direction.
 - 1 2. A program which causes an information processing
2 apparatus to execute:
3 an arranging process for obtaining the number of
4 individuals which form a crowd at time t and the position of each
5 individual, and assigning a position to each individual in the
6 crowd at the next time $t + 1$ in accordance with a predetermined
7 arrangement rule;

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8 a process for determining a destination direction with
9 regard to a reference point of the crowd, determined by the
10 positions of the individuals which form the crowd at time t ; and
11 a process for determining the position at the next time $t + 1$
12 according to the position assigned by said arrangement process
13 and said destination direction.

1 3. An information processing apparatus comprising:

2 arranging means for obtaining the number of individuals
3 which form a crowd at time t and the position of each individual,
4 and assigning a position to each individual in the crowd at the
5 next time $t + 1$ in accordance with a predetermined arrangement
6 rule;

7 means for determining a destination direction with regard
8 to a reference point of the crowd, determined by the positions of
9 the individuals which form the crowd at time t ; and
10 means for determining the position at the next time $t + 1$
11 according to the position assigned by said arrangement process
12 and said destination direction.

1 4. A program for displaying, on a display apparatus, a
2 moving image of a plurality of characters which move in a
3 virtual space, said program causing an information processing
4 apparatus to execute:

5 a mode determination process for determining whether each

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6 character should operate as an individual or as a crowd;
7 a virtual object creation process for specifying a group of
8 characters which form the crowd and creating a virtual object
9 which gives movement information about movement to the group
10 of characters when it is determined that each character should
11 operate as part of a crowd; and
12 a crowd movement process for causing the group of
13 characters to move on the basis of said movement information.

1 5. A program according to claim 4, wherein said movement
2 information contains information about a character assignment
3 position in a virtual space and information about the destination
4 direction of the virtual object.

1 6. A program according to claim 5, which further causes
2 said information processing apparatus to execute an operator
3 character display process for displaying, on a display screen of
4 the display apparatus, a moving image of an operator character
5 which moves in a virtual space in accordance with the operation
6 of an operator, which is received via an operation apparatus,
7 wherein the destination direction of said virtual object is a
8 direction in which said operator character in the virtual space is
9 chased.

1 7. A program according to claim 4, which further causes

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2 said information processing apparatus to execute;

3 a character movement process for causing a character to
4 move in the virtual space when it is determined in said mode
5 determination process that the character should move as an
6 individual;

7 a character search process for determining whether or not
8 another character is present within an area of a predetermined
9 range corresponding to the position of the character in the
10 virtual space; and

11 a crowd forming process for causing the character to act so
12 as to form a crowd together with said other character when it is
13 determined that the other character is present.

1 8. A program according to claim 5, wherein the character
2 assignment position in said virtual space is a position in one
3 circle or in a plurality of concentric circles, around a reference
4 point determined based on the positions of the group of
5 characters which form a crowd, and the characters in the same
6 circle are evenly spaced apart.

1 9. A recording medium, readable by said information
2 processing apparatus, having recorded therein said program
3 according to any one of claims 2, 4, 5, 6, 7, and 8.